

# MASSACHUSETTS WATER RESOURCES COMMISSION

## Hydrologic Conditions in Massachusetts

### August 2015 Summary



- August precipitation was below normal for all regions.
- August streamflows were normal except for the Central region.
- August groundwater levels were normal.
- August reservoir levels were normal.

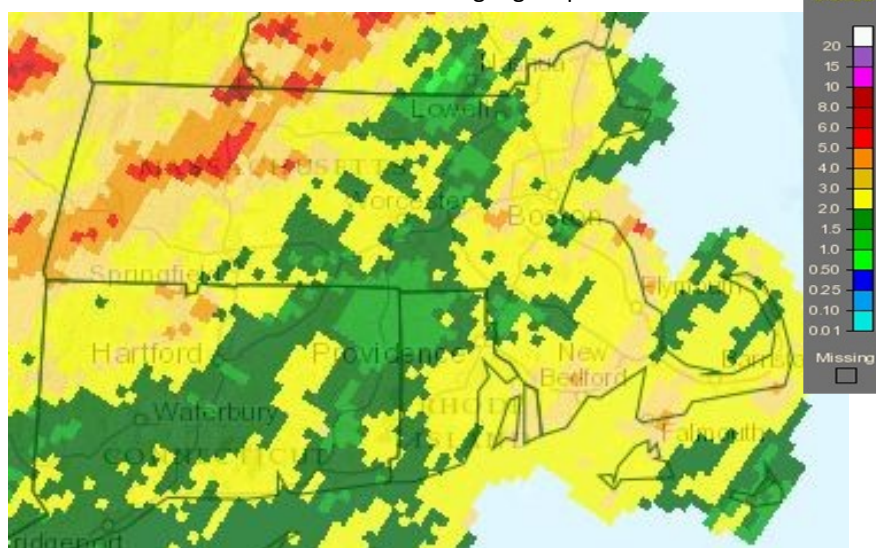
#### PRECIPITATION CONDITIONS

**Summary: August precipitation was below normal for all regions across the state.**

Region	August Estimated Rainfall: Composite Sites Reporting (inches)	Departure from Normal (inches)	MA Management Drought Plan Levels	
			Standardized Precipitation Index	Percent of Normal Index
Cape Cod & Islands	2.72	-0.97	6-mos	Normal
Central	2.10	-1.86	Normal	Normal
Connecticut River	2.66	-1.29	Normal	Normal
Northeast	2.53	-1.10	Normal	Normal
Southeast	2.84	-1.08	Normal	Normal
Western	3.00	-1.31	Normal	Normal

Key to Levels
Normal
Advisory
Watch
Warning
Emergency

**Aug 2015 Total Observed Rainfall from National Weather Service**  
found at <http://water.weather.gov/precip/> estimated from radar data correlated to NWS rainfall gauge reports



#### Weather Events of Note

(Source: NWS Taunton E-5 Report)

Rainfall during August 2015 was largely driven by showers and thunderstorms. This resulted in rainfall totals varying considerably across southern New England. The highest rainfall totals for the month were generally noted in western Massachusetts, where totals mostly ranged from 2.5 to 5 inches.

The second region where rainfall totals were consistently higher was southeast Massachusetts...

Temperatures averaged 2 to 3 degrees above normal for August 2015. Both Boston and Providence had one of their top 10 warmest Augusts on record.

Over the course of the month there were a few locally heavy rains that caused poor drainage flooding in urban areas. The most substantial urban flood event for the month occurred during the evening of August 15th, when standing floodwaters resulted in several road closures in both Worcester and Framingham.

## STREAMFLOW CONDITIONS

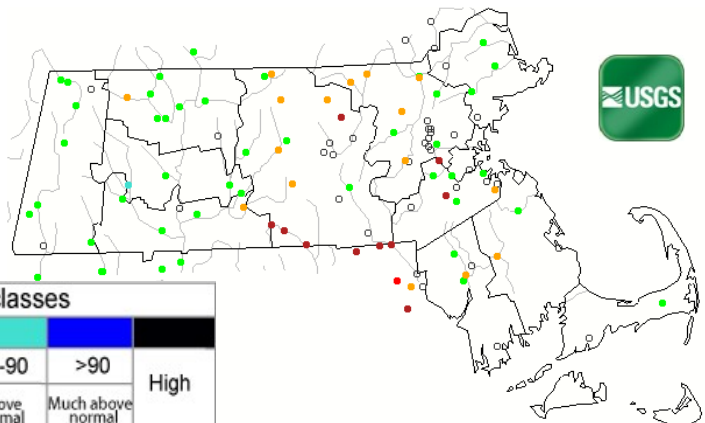
**Summary:** August streamflow conditions were normal except for the Central region which was below normal.

General Streamflow Conditions in Massachusetts August 2015		
Region	July Streamflow Conditions	MA Drought Management Plan Streamflow Index
Cape Cod & Islands	ND	Normal
Central	Below Normal	Normal
Connecticut River	Normal	Normal
Northeast	Normal	Normal
Southeast	Normal	Normal
Western	Normal	Normal

**Note:** Streamflow conditions for individual streamflow-gaging stations may differ from general conditions.  
ND, no data

Average August 2015 streamflow monitored by the Commonwealth of Massachusetts and United States Geological Survey (USGS) cooperative stream gaging program. See map at right found at: <http://waterwatch.usgs.gov/new/index.php?m=mv01d&r=ma&w=map>

**August 2015 Monthly Streamflow Compared to Historical August Streamflow**



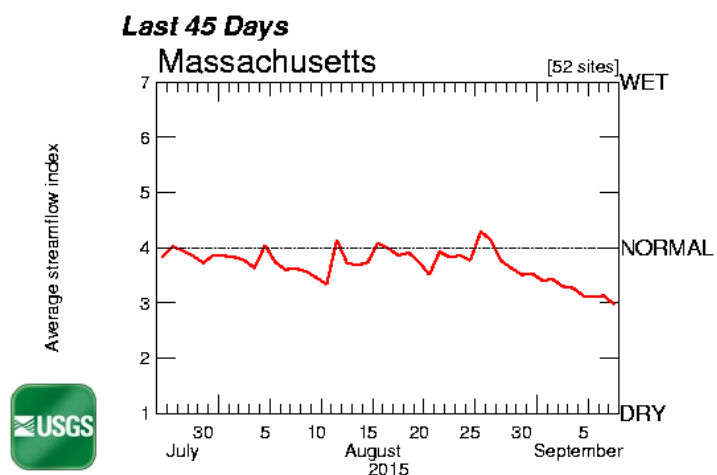
Explanation - Percentile classes					
Low	<10	10-24	25-75	76-90	>90
	Much below normal	Below normal	Normal	Above normal	Much above normal
					High

This graph depicts a composite daily streamflow relative to normal streamflow for Massachusetts for the 45-day period of July 24 to September 7, 2015. An updated summary plot may be found at: <http://waterwatch.usgs.gov/index.php>

### KEY:

- 1 = New record low for day
- 2 = < 10<sup>th</sup> percentile
- 3 = 10<sup>th</sup> – 24<sup>th</sup> percentile
- 4 = 25<sup>th</sup> – 74<sup>th</sup> percentile
- 5 = 75<sup>th</sup> – 89<sup>th</sup> percentile
- 6 = 90<sup>th</sup> percentile
- 7 = New record high for day

**Time Series Plot of Real-Time Streamflow Compared to Historical Streamflow for the Day of the Year**



## GROUNDWATER LEVELS

**Summary:** August groundwater levels were normal.

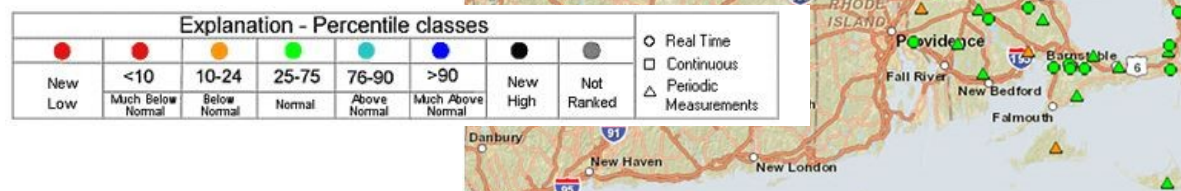
### General Groundwater Conditions in Massachusetts at the end of August 2015

Region	Groundwater Conditions	MA Drought Plan Groundwater Index
Cape Cod & Islands	normal	normal
Central	normal	normal
Connecticut River	normal	normal
Northeast	normal	normal
Southeast	normal	normal
Western	normal	Normal`

**Note:** Groundwater conditions for individual wells may differ from general conditions. ND, no data

The USGS Groundwater Conditions for the end of August 2015 can be viewed at the web site:

[http://ma.water.usgs.gov/water\\_statement/2015\\_08/index.html](http://ma.water.usgs.gov/water_statement/2015_08/index.html)



## RESERVOIR LEVELS

**Summary:** August reservoir levels were normal across all regions of the state based on percent full values, as reported by participating water suppliers.

### General Reservoir Levels in Massachusetts at the end of August 2015

Region	Reservoir Level	MA Drought Management Plan Reservoir Index
Cape Cod & Islands	Normal	Normal
Central	Normal	Normal
Connecticut River	Normal	Normal
Northeast	Normal	Normal
Southeast	Normal	Normal
Western	Normal	Normal

## NWS/NOAA DROUGHT OUTLOOK AND FORECAST

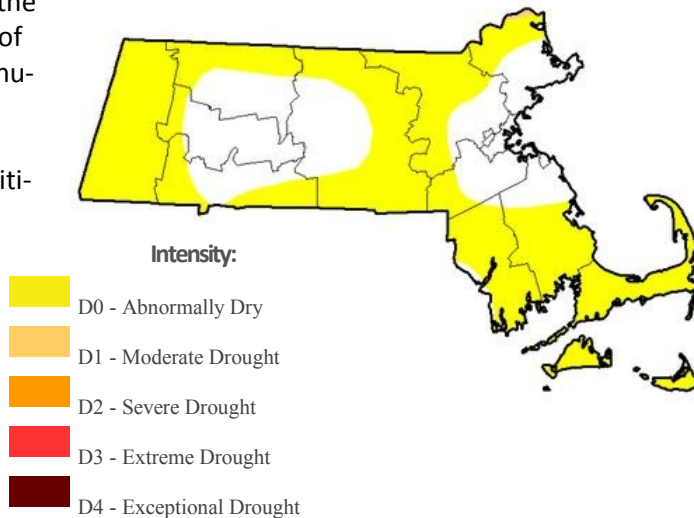
### U.S. Drought Monitor: Massachusetts September 8, 2015

**Summary:** As of September 8, 2015, the U.S. Drought Monitor shows regions of abnormally dry conditions in Massachusetts.

Produced by the National Drought Mitigation Center (NDMC). Intensity based on NDMC criteria.

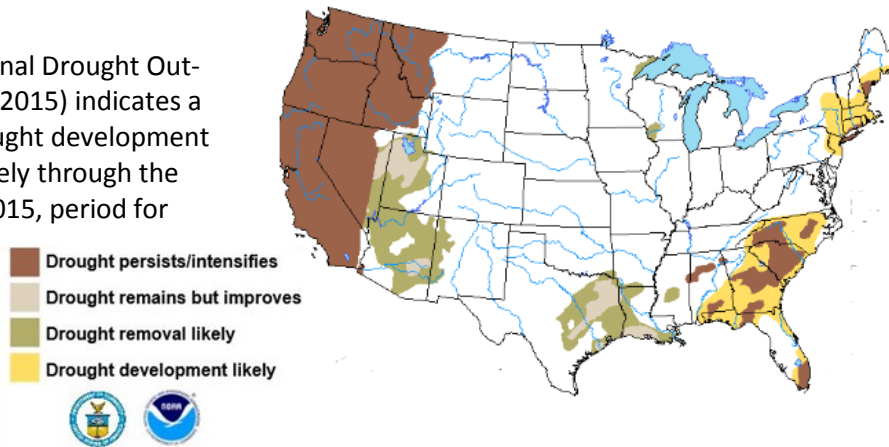
For updated map see:

<http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?MA>



### Seasonal Drought Outlook Released August 20 2015; valid August 20 - November 30, 2015

The NOAA Seasonal Drought Outlook (August 20, 2015) indicates a tendency of drought development (D1 or worse) likely through the November 30, 2015, period for Massachusetts.



## NOAA NATIONAL WEATHER SERVICE CLIMATE PREDICTION CENTER

The Climate Prediction Center September 9<sup>th</sup> forecast shows above normal temperature and below normal precipitation in the Massachusetts region for September 15 to September 19, 2015. (<http://www.cpc.noaa.gov/products/predictions/610day/>). The Center's August 20<sup>th</sup> three-month outlook for September, October, and November 2015 shows above normal temperatures and below normal precipitation. ([http://www.cpc.noaa.gov/products/predictions/long\\_range/seasonal.php?lead=1](http://www.cpc.noaa.gov/products/predictions/long_range/seasonal.php?lead=1)). More information is available at (<http://www.cpc.noaa.gov/index.php>).

**Key Links:** Massachusetts Drought Management Plan: <http://www.mass.gov/eea/docs/eea/wrc/droughtplan.pdf>

**September 10, 2015:** This report was prepared by the Massachusetts Department of Conservation and Recreation. Data may be preliminary in nature. Additional information, previous and future water conditions reports can be found on our web site: <http://www.mass.gov/eea/agencies/dcr/water-res-protection/water-data-tracking/precipitation-composite-current-conditions.html>